Performance of Beef Cattle Females Grazing under Different Feeding Systems Based on Native Pastures in Southern Brazil

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Performance of beef cattle females grazing under different feeding systems based on native pastures in southern Brazil

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Introduction In the Brazilian State of Rio Grande do Sul ,most bovine females are bred for the first time at three years of age , while backgrounding of beef heifers is one of the most onerous phases of the productive cycle .In this phase a feeding system that explores to the maximum the herbage resources of the area ,such as the native pasture ,should be used to make possible a constant growth with live weight gain rates that allow the heifers to reach puberty with the smallest possible age .In this region , the natural grasslands are used to feed about 90% of the beef cattle herd .

Materials and methods The goal of this study was to evaluate the performance of beef cattle females till 24 months of age grazing a native grassland managed with three feeding systems : native grassland (NG) ,native grassland + protein mineral salt supplement (NGS) and native grassland oversowed (ING) with annual Italian Ryegrass (*Lolium multiflorum*) ,White Clover (*Trifolium repens*) and Birdsfoot Trefoil (*Lotus corniculatus*) . These treatments were applied during two winters .The first evaluation period was from August to December ,2005 and de second was from June to November ,2006 .Tester animals were 81 Brangus breed heifers ,27 in each treatment in the first winter .At de second winter the animals from each treatment were separated into nine groups balanced to weight and reallocated in the three treatments .During the summer and autumn all beef females were in a same native pasture area .The parameters evaluated were body condition score (BCS ,1-5 scale) and live weight gain (LWG) .The experimental design was randomized blocks ,with three replicates .The effect of treatment during the first and second winter was tested .Data was analyzed by GLM Procedure and the averages were compared using the Tukey Test ($P<0.05$) using SAS version 8 .02 (2001) .

Results Table 1 show BCS and final live weight (FLW) of beef cattle females grazing native grassland managed with three feeding systems in the end of the first winter (2005) .Figure 1 shows the animal performance in the second winter .From July to November ,the animals from ING feeding system had larger LWG than the others feeding systems (NGS and NG ; $P<0.05$) that implied they reached 24 months of age about 40 kg heavier than the others ($P<0.01$) and also had better body score condition ($P<0.05$) : 3 .7 versus 3 .6 and 3 .5 for NGS and NG ,respectively .The minimum life weight recommended by NRC (1996) for the first breeding of Bos indicus crossed heifers with is 65% of the adult weight ,which is 450 kg for the Brangus breed .Therefore ,in the end of the experimental period ,the heifers presented 76% of the adult weight in ING and 66 .8% in NG or IGS with 24 months of average age .There was no interaction of the treatment in the first winter with the LWG of the second winter ; nevertheless ,differences in body weight at the end of first winter were retained throughout the second winter .

Table 1 *Body condition score (BCS) and final live weight (FLW ,kg) of Brangus females from August to December , 2005 .*

Treatment	ILW (kg)	FLW (kg)
ING	3 ,9 a	247 a
NG	3 ,7 b	212 b
NGS	3 ,7 b	226 b

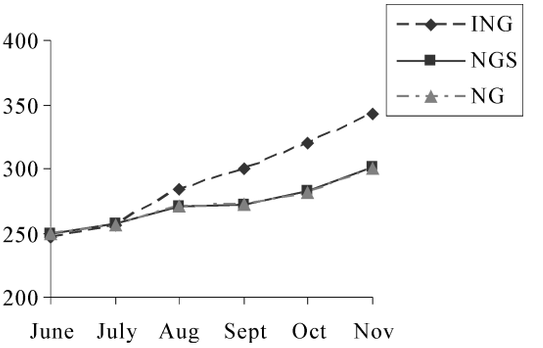

Figure 1 *Development of Brangus females from June to November ,2006 .*

Conclusions The natural pasture allows for all year long live weight gains that suffice beef heifers requirements to reach the live weight and body condition score necessary for first breeding at 24 months of age .The use of techniques to improve the natural grasslands ,such as fertilization and introduction of cultivated species ,increases the animal performance .

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